

CLAIMS

1. A tension mechanism for a seat having a frame with a plurality of springs having an undulating shape defining tension belt receiving areas and having a support side, said plurality of springs attached between two opposing braces in said frame, said tension mechanism comprising:

a plurality of tension belts having first and second ends and disposed in said tension belt receiving areas and adapted for adjusting a vertical displacement of said support side of each of said plurality of springs, each of said plurality of tension belts coupled proximate at least said first end to a tension belt tensioning device adapted to produce more or less tension in said plurality of tension belts, wherein the vertical displacement of said support side of each of said plurality of springs is less when said plurality of tension belts are under low tension than when they are under higher tension.

2. The tension mechanism for a seat as in Claim 1, wherein said second end of each of said plurality of tension belts is attached to said seat frame.

3. The tension mechanism for a seat as in Claim 2, wherein each of said tension belts engages one of said plurality of springs alternately from above and below in a longitudinal direction.

4. The tension mechanism for a seat as in Claim 1, wherein said first end of each of said plurality of tension belts passes over at least one direction-changing device.

5. The tension mechanism for a seat as in Claim 3, wherein said tensioning device includes a wind-up spool.

6. The tension mechanism for a seat as in Claim 5, wherein a rotational axis of said wind-up spool is generally perpendicular to said longitudinal direction and wherein all said plurality of tension belts may be simultaneously tensioned via said wind-up spool.

7. The tension mechanism for a seat as in Claim 1, wherein side edges of each of said plurality of tension belts are each positioned adjacent to an inner side of tension belt receiving areas of said springs.

8. The tension mechanism for a seat as in Claim 1, wherein each of said plurality of tension belts pass over and under adjacent cross members formed by each of said of said springs.

9. The tension mechanism for a seat as in Claim 1, wherein said wind-up spool is operated by a drive motor.

10. The tension mechanism for a seat as in Claim 1, wherein changing said tension of each of said plurality of tension springs adjusts the vertical displacement between seat side members and a central seat portion.

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11. A tension mechanism for a seat having a frame with a plurality of springs having an undulating shape defining tension belt receiving areas and having a support side, said plurality of springs attached between two opposing braces in said frame, said tension mechanism comprising:

a plurality of tension belts having first and second ends and disposed in said tension belt receiving areas of said springs, and adapted for adjusting a vertical displacement of said support side of each of said plurality of springs, each of said plurality of tension belts coupled proximate at least said first end to a tension belt tensioning device adapted to produce more or less tension in said plurality of tension belts, said second end of each of said plurality of tension belts attached to said seat frame, said tensioning device including a wind-up spool wherein a rotational axis of said wind-up spool is disposed generally perpendicular to a longitudinal direction of said springs, and wherein all said plurality of tension belts may be simultaneously tensioned via said wind-up spool, wherein the vertical displacement of said support side of each of said plurality of springs is less when said plurality of tension belts are under low tension than when they are under higher tension.